

INTERNATIONAL SEARCH REPORT

International application No.

PCT/DK 00/00202

A. CLASSIFICATION OF SUBJECT MATTER IPC7: C07D 401/04, 403/04, 401/14, 405/04, 409/04, 409/14, 417/04, 417/14, A61K 31/495, A61P 25/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: C07D, A61K, A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 9921834 A1 (NEUROSEARCH A/S), 6 May 1999 (06.05.99)	1-14
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X	US 4179563 A (DONALD E. BUTLER ET AL), 18 December 1979 (18.12.79)	1-3,8-14
A		4-7
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X	EP 0361489 A2 (CHUGAI SEIYAKU KABUSHIKI KAISHA), 4 April 1990 (04.04.90)	1-3,8-14
A		4-7
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☒ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

3 August 2000

Date of mailing of the international search report

14-08-2000

Name and mailing address of the ISA/

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 1492528 A (MERCK & CO. INC.), 23 November 1997 (23.11.97)	1-3,8-14
A	--	4-7
X	US 4163849 A (WILLIAM C. LUMMA ET AL), 7 August 1979 (07.08.79)	1-3,8-14
A	--	4-7
X	EP 0156433 A2 (JANSSEN PHARMACEUTICA N.V.), 2 October 1985 (02.10.85)	1-3,8
A	--	4-7,9-14
X	WO 9610568 A1 (MERCK & CO., INC.), 11 April 1996 (11.04.96)	1-3,8-14
A	--	4-7
X	STN International, File CAPLUS, CAPLUS accession no. 117:171353, Xu, Ping et al: "Synthesis and anticonvulsant activity of 3-(substituted piperazino)-6-(substituted phenyl)pyridazines"; & Beijing Yike Daxue Xuebao (1991), 23(6), 477-80	1-3,8-14
A	--	4-7
X	STN International, File CAPLUS, CAPLUS accession no.1999:235769, Document no. 130:338083, Manetti, Dina et al: "Hybridized and isosteric analogs of N1-acetyl-N4-dimethylpiperazinium iodide (ADMP) and N1-phenyl-N4-dimethylpiperaziniumiodide (DMPP) with central nicotinic action"; & Bioorg. Med. Chem. (1999), 7(3), 457-465	1-3,8-14
A	--	4-7

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0385350 A1 (NISSHIN FLOUR MILLING CO., LTD.), 5 Sept 1990 (05.09.90)	1-3,8
A	--	4-7,9-14
X	EP 0211457 A2 (JANSSEN PHARMACEUTICA N.V.), 25 February 1987 (25.02.87)	1-3,8
A	--	4-7,9-14
X	EP 0802173 A1 (TOSOH CORPORATION SHINNANYO-SHI), 22 October 1997 (22.10.97)	1-3
A	--	4-14
X	US 4806536 A (PETER E. CROSS ET AL), 21 February 1989 (21.02.89)	1-3
A	--	4-14
A	STN International, File CAPLUS, CAPLUS accession no. 89:36473, Georgiev, G. et al: " Study of the effect of piperazine derivatives on smooth muscles"; & Farmatsiya (Sofia) (1977), 27(3), 23-8	1-14
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Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.: 12-14
because they relate to subject matter not required to be searched by this Authority, namely:
see extra sheet 1.
2. ☒ Claims Nos.: 1-3, 6, 8-14
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
see extra sheet 2.
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a):

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

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continuation of box I, 1.

Claims 12-14 relate to methods of treatment of the human or animal body by surgery or by therapy/diagnostic methods practised on the human or animal body/ Rule. 39.1.(iv). Nevertheless, a search has been executed for these claims. The search has been based on the alleged effects of the compounds/compositions.

continuation of box I, 2.

Present claims 1-3, 6, 8-14 relate to an extremely large number of possible compounds. Support within the meaning of Article 6 PCT and / or disclosure within the meaning of Article 5 PCT is to be found, however, for only a very small proportion of the compounds claimed. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible.

Consequently, the search has been carried out for those parts of the claims which appear to be supported and disclosed, namely those parts related to the compounds in the examples and claims 4-5 and 7.

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Information on patent family members

International application No.

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Patent document cited in search report			Publication date	Patent family member(s)	Publication date
WO	9921834	A1	06/05/99	AU 9736898 A	17/05/99
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				CA 1109468 A	22/09/81
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International application No.

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